

Standards and Best Practices related to the Publication, Exchange, and Usage of Open Data

Marcia Zeng
Kent State
University

**Marjorie Hlava
&
Bob Kasenchak**
Access
Innovations

Jane Greenberg
Drexel
University

Mark Needleman
ASIS&T
Standards
Committee
co-Chair



Association for Information Science and Technology



[JOIN](#)

[EVENTS](#)

[NEWS](#)

[PUBLICATIONS](#)

[ABOUT](#)

[FIND YOUR GROUPS](#)

[CAREERS](#)

[ASIS&T](#) > [About ASIS&T](#) > [Board & Committees](#) > [Meet Committees & Task Forces](#) >

Standards Committee

Standards Committee

[Standards Committee Activities 2017](#)

[Standards Committee Activities 2016](#)

[Standards Committee Activities 2015](#)

[Standards Committee Activities 2014](#)

[Standards Committee Activities 2013](#)

The Standards Committee shall advise the Board of Directors and shall represent the Association's interest in matters pertaining to standards. It shall actively identify potential new standards needed by the information community and shall take the necessary steps to initiate development of such needed standards with the appropriate organizations. The Chair, after consultation with the full committee, may vote or comment in accordance with the majority opinion of the committee in the name of the Association on all proposed standards submitted by organizations with which the Association affiliates. All such action and comment must be promptly reported to the Board of Directors; actions and comments proposed should be reported to the board in advance whenever possible.

Co-Chair: [Mark Needleman](#)

Co-Chair: [Timothy Dickey](#)

Board Liaison: [Fidelia Ibekwe-SanJuan](#), IRSIC – Aix-Marseille University

Standards Committee Activities 2017

Standards Committee

Standards Committee
Activities 2017

Standards Committee
Activities 2016

Standards Committee
Activities 2015

Standards Committee
Activities 2014

Standards Committee
Activities 2013

Standards Committee
Activities 2012

Standards Committee
Activities 2010-2011

Last updated 10/19/2017

1. Voted **YES** N921, NWIP, Guidelines for Bibliographic reference citations to information

Question:

Do you approve, disapprove, or abstain on this NWIP (New Work Proposal – ISO TC 46-SC 9, N921, Guidelines for Bibliographic and citations to information resources?

Description:

This International Standard gives guidelines for the preparation of bibliographic references. It also gives guidelines for the preparation of citations in Latin scripts in works that are not themselves primarily bibliographical. It is applicable to bibliographic references and to all kinds of information resources, including but not limited to monographs, serials, contributions, patents, cartographic material, electronic information resources (including research datasets, computer software and social media), music, recorded sound, photographs, graphic and audiovisual works, and moving images. It is applicable to machine-parsable citations. It is also not applicable to citations, which have their own standards.

42. Voted **APPROVE** on ISO TC 46/SC 4, ISO/FDIS 18626 (Ed 2)– Information and documentation, Interlibrary loan transactions

Question:

Do you approve the technical content of the final draft?

Description:

This document specifies the transactions between libraries or libraries and other agencies to handle requests for library items and the following exchange of messages.

43. Voted **YES** on TC46/SC9 Ballot on the withdrawal of ISO/NP 15707, Information and documentation – International Standard Musical Work Code (ISWC)

Question:

Based on this recommendation, should TC46/SC9 withdraw the project to revise ISO 15707 and disband TC46/SC9/WG2?

Description:

Last updated
10/19/2017

Casted votes 43 times

Standards and Best Practices related to the Publication, Exchange, and Usage of Open Data

- *Data On The Web*
- *Image-based Resources*

Marcia Zeng
Kent State
University

mzeng@kent.edu

Marjorie Hlava
&
Bob Kasenchak
Access
Innovations

Jane Greenberg
Drexel
University

Mark Needleman
ASIS&T
Standards
Committee
co-Chair

Standards and Best Practices related to the Publication, Exchange, and Usage of Open Data

- *Data On The Web*
- *Image-based Resources*

Marcia Zeng
Kent State
University

mzeng@kent.edu

**Marjorie
Hlava**
Access
Innovations

**Jane
Greenberg**
Drexel
University

Mark Needleman
ASIS&T
Standards
Committee
co-Chair

PUBLISHING AND SHARING DATA ON THE WEB

The openness and flexibility of the Web have created

- new opportunities &
- new challenges

Data publishers and data consumers may be unknown to each other.

How to represent, describe, and make data available (by publishers) in a way that it will be easily found, understood, used and re-used (by consumers)?

Are there standards and best practices?

data publishers
data consumers



<http://reusabledata.org/logo-circle.png>

THE IMPORTANCE OF FOLLOWING THE BEST PRACTICES

Providing some information about the datasets and distributions will contribute to trustworthiness and reuse of:

- structural metadata,
- descriptive metadata,
- access information,
- data quality information,
- provenance information,
- license information, and
- usage information.

data publishers
data consumers



<http://reusabledata.org/logo-circle.png>

I. Data On The Web Best Practices

W3C Recommendation 31 January 2017

- Best Practices related to the publication and usage of data on the Web designed to help support a self-sustaining ecosystem.

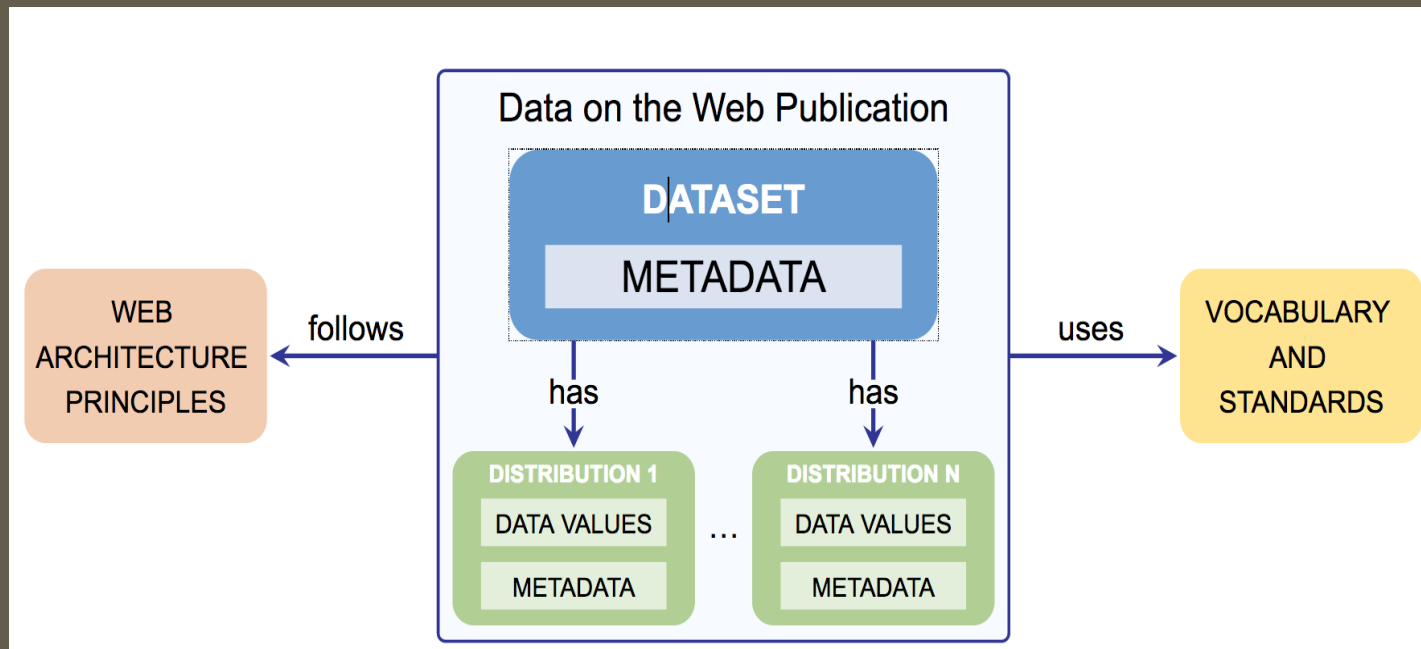


Image source: <https://www.w3.org/TR/dwbp/>

The Best Practices

Running Example

Metadata

Data Licenses

Data Provenance

Data Quality

Data Versioning

Data Identifiers

Data Formats

Data Vocabularies

Data Access

Data Access APIs

Data Preservation

Feedback

Data Enrichment

Republication

- 3. Scope
- 4. Context
- 5. Namespaces
- 6. Best Practices Template
- 7. Best Practices Summary
- 8. **The Best Practices**
 - 8.1 Running Example
 - 8.2 Metadata
 - 8.3 Data Licenses
 - 8.4 Data Provenance
 - 8.5 Data Quality
 - 8.6 Data Versioning
 - 8.7 Data Identifiers
 - 8.8 Data Formats
 - 8.9 Data Vocabularies
 - 8.10 Data Access
 - 8.10.1 Data Access APIs
 - 8.11 Data Preservation
 - 8.12 Feedback
 - 8.13 Data Enrichment
 - 8.14 Republication
- 9. Glossary
- 10. Data on the Web Challenges
- 11. Best Practices Benefits
- 12. Use Cases Requirements x Best Practices
 - A. Acknowledgements
 - B. Change history
 - C. References
 - C.1 Informative references

6. Best Practices Template

This section presents the template used to describe Data on the Web Best Practices.

Best Practice Template

Short description of the BP

Why

This section answers two crucial questions:

- Why this is specifically relevant to publishing or reusing data on the Web?
- How does this encourage publication or reuse of data on the Web?

A full text description of the problem addressed by the Best Practice may also be provided. It can be any length but is likely to be no more than a few sentences.

Intended Outcome

What it should be possible to do when a data publisher follows the Best Practice.

Possible Approach to Implementation

A description of a possible implementation strategy is provided. This represents the best advice available at the time of writing but specific circumstances and future developments may mean that alternative implementation methods are more appropriate to achieve the intended outcome.

How to Test

Information on how to test the BP has been met. This might or might not be machine testable.

Evidence

Information about the relevance of the BP. It is described by one or more relevant requirements as documented in the Data on the Web Best Practices Use Cases & Requirements document [DWBP-UCR]

Benefits

A **benefit** represents an improvement in the way how datasets are available on the Web. A Best Practice can have one or more benefits.



Reuse



Comprehension



Linkability



Discoverability



Trust



Access



Interoperability



Processability

Benchmarks

- Reuse
- Comprehension
- Linkability
- Discoverability
- Trustiness
- Accessibility
- Interoperability
- Processability

Benefits that data publishers will gain with adoption of the Best Practices

REUSE

All Best Practices

ACCESS

Provide bulk download

Provide Subsets for Large Datasets

Use content negotiation for serving data available in multiple formats

Provide real-time access

Provide data up to date

Make data available through an API

Use Web Standards as the foundation of APIs

Provide Complementary Presentations

PROCESSABILITY

Provide metadata

Provide structural metadata

Use machine-readable standardized data formats

Provide data in multiple formats

Reuse vocabularies, preferably standardized ones

Provide Subsets for Large Datasets

Make data available through an API

Use Web Standards as the foundation of APIs

Enrich data by generating new data

INTEROPERABILITY

Use persistent URIs as identifiers of datasets

Use persistent URIs as identifiers within datasets

Reuse vocabularies, preferably standardized ones

Choose the right formalization level

Make data available through an API

Use Web Standards as the foundation of APIs

Avoid Breaking Changes to Your API

Provide Feedback to the Original Publisher

(cont.)
Benefits that
data publishers
will gain with
adoption of the
Best Practices

DISCOVERABILITY

- Provide metadata
- Provide descriptive metadata
- Use persistent URIs as identifiers of datasets
- Use persistent URIs as identifiers within datasets
- Assign URIs to dataset versions and series
- Use Web Standards as the foundation of APIs
- Cite the Original Publication

TRUST

- Provide data license information
- Provide data provenance information
- Provide data quality information
- Provide a version indicator
- Provide version history
- Assign URIs to dataset versions and series
- Reuse vocabularies, preferably standardized ones
- Provide an explanation for data that is not available
- Provide complete documentation for your API
- Avoid Breaking Changes to Your API
- Preserve identifiers
- Assess dataset coverage
- Gather feedback from data consumers
- Make feedback available
- Enrich data by generating new data
- Provide Complementary Presentations
- Provide Feedback to the Original Publisher
- Follow Licensing Terms
- Cite the Original Publication

LINKABILITY

- Use persistent URIs as identifiers of datasets
- Use persistent URIs as identifiers within datasets
- Provide Subsets for Large Datasets
- Use Web Standards as the foundation of APIs

COMPREHENSION

- Provide metadata
- Provide descriptive metadata
- Provide structural metadata
- Provide data provenance information
- Use locale-neutral data representations
- Reuse vocabularies, preferably standardized ones
- Choose the right formalization level
- Gather feedback from data consumers
- Enrich data by generating new data
- Provide Complementary Presentations

For each best practice, the component could include:

Best Practice 1: Provide metadata

Provide metadata for both human users and computer applications.

Why

Providing metadata is a fundamental requirement when publishing data on the Web because data publishers and data consumers may be unknown to each other. Then, it is essential to provide information that helps human users and computer applications to understand the data as well as other important aspects that describes a dataset or a distribution.

Intended Outcome

Humans will be able to understand the metadata and computer applications, notably user agents, will be able to process it.

Possible Approach to Implementation

Possible approaches to provide *human-readable metadata*:

- to provide metadata as part of an HTML Web page
- to provide metadata as a separate text file

<https://www.w3.org/TR/dwbp/#ProvideMetadata>

EXAMPLE 1

Human-readable

[Example page](#) with a human-readable description of an available dataset.

Machine-readable

[Example file](#) with a machine-readable description of an available dataset.

How to Test

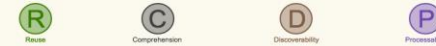
Check if human-readable metadata is available.

Check if the metadata is available in a valid machine-readable format and without syntax error.

Evidence

Relevant requirements: [R-MetadatableAvailable](#), [R-MetadatableDocum](#), [R-MetadatableMachineRead](#)

Benefits



Possible approaches to provide *machine-readable metadata*:

- machine-readable metadata may be provided in a serialization format such as Turtle and JSON, or it can be embedded in the HTML page using [\[HTML-RDFA\]](#) or [\[JSON-LD\]](#). If multiple formats are published separately, they should be served from the same URL using [content negotiation](#) and made available under separate URIs, distinguished by filename extension. Maintenance of multiple formats is best achieved by generating each available format on the fly based on a single source of the metadata.
- when defining machine-readable metadata, reusing existing standard terms and popular vocabularies are strongly recommended. For example, Dublin Core Metadata (DCMI) terms [[DCTERMS](#)] and Data Catalog Vocabulary [[VOCAB-DCAT](#)] can be used to provide descriptive metadata. Such vocabularies are designed to be very flexible so it is often helpful to use a specific *profile* of a vocabulary such as the European Commission's [DCAT-AP](#) <https://www.w3.org/TR/dwbp/>

2. WEB ANNOTATION

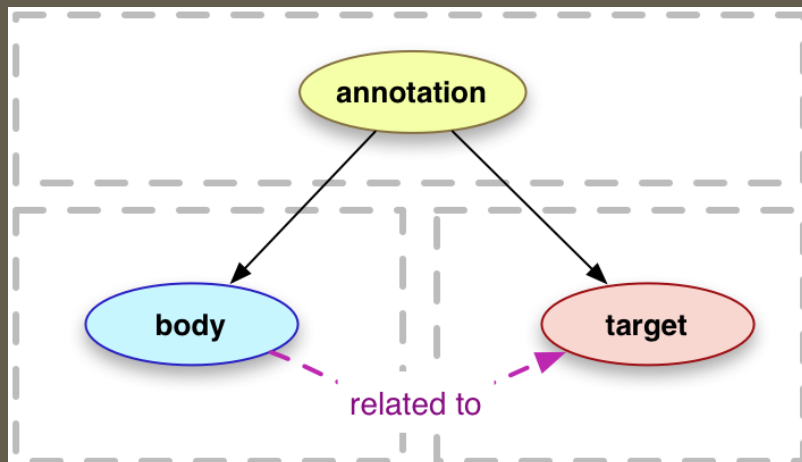
Annotations are typically used to convey information about a resource or associations between resources.

Simple examples include *a comment or tag* on a single web page or image, or *a blog post* about a news article.

Web Annotation Data Model

- W3C Recommendation 23 February 2017

-- a structured model and format to enable annotations to be shared and reused across different hardware and software platforms.



<https://www.w3.org/TR/annotation-model/>

Web Annotation Vocabulary

- W3C Recommendation 23 February 2017
- -- specifies the set of RDF classes, predicates and named entities that are used by the *Web Annotation Data Model*.

Web Annotation Protocol

- W3C Recommendation 23 February 2017
- -- The Protocol describes the transport mechanisms for creating and managing annotations in a method that is consistent with the *Web Architecture* and *REST* best practices.

TABLE OF CONTENTS

- 1. Introduction**
 - 1.1 Aims of the Model
 - 1.2 Serialization of the Model
 - 1.3 Conformance
 - 1.3.1 Conformance Requirements Relating to Selectors
 - 1.4 Terminology
- 2. Web Annotation Principles**
- 3. Web Annotation Framework**
 - 3.1 Annotations
 - 3.2 Bodies and Targets
 - 3.2.1 External Web Resources
 - 3.2.2 Classes
 - 3.2.3 Segments of External Resources
 - 3.2.4 Embedded Textual Body
 - 3.2.5 String Body
 - 3.2.6 Cardinality of Bodies and Targets
 - 3.2.7 Choice Between Bodies
 - 3.3 Other Properties
 - 3.3.1 Lifecycle Information
 - 3.3.2 Agents
 - 3.3.3 Intended Audience
 - 3.3.4 Accessibility of Content
 - 3.3.5 Motivation and Purpose
 - 3.3.6 Rights Information
 - 3.3.7 Other Identities

3.3.5 Motivation and Purpose

In many cases it is important to understand the reasons why the Annotation was created, or why the Textual Body was included in the Annotation, not just the times and agents involved. These reasons are provided by declaring the motivation for the Annotation's creation or the purpose for the inclusion of the Textual Body in the Annotation; the "why" rather than the "who" and "when" described in the previous sections.

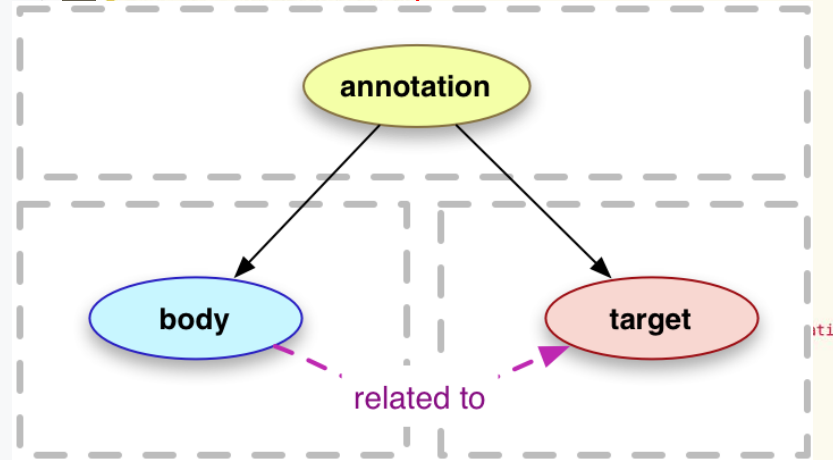
Example Use Case: Noelle annotates a resource intending to bookmark it for future reference, and provides a description and a tag to make it easier to find again. Her client adds the right motivations to the Annotation and the Textual Body resources to capture this.

Model

| Term | Type | Description |
|------------|--------------|--|
| motivation | Relationship | The relationship between an Annotation and a Motivation. There should be exactly 1 motivation for each Annotation, and than 1. |
| purpose | Relationship | The reason for the inclusion of the Textual Body within the Annotation. There may be 0 or more purposes associated with a TextualBody . |
| Motivation | Class | The Motivation for an Annotation is a reason for its creation, and things like Replying to another annotation, Commenting on a resource to a related resource. |

Example

EXAMPLE 15: Motivation and Purpose



Web Annotation Data Model

<http://www.w3.org/TR/annotation-model/>

| | | Motivations |
|--------------|----------|---|
| assessing | Instance | The motivation for when the user intends to assess the target resource in some way, rather than simply make a comment about it. For example to write a review or assessment of a book, assess the quality of a dataset, or provide an assessment of a student's work. |
| bookmarking | Instance | The motivation for when the user intends to create a bookmark to the Target or part thereof. For example an Annotation that bookmarks the point in a text where the reader finished reading. |
| classifying | Instance | The motivation for when the user intends to classify the Target as something. For example to classify an image as a portrait. |
| commenting | Instance | The motivation for when the user intends to comment about the Target. For example to provide a commentary about a particular PDF document. |
| describing | Instance | The motivation for when the user intends to describe the Target, as opposed to (for example) a comment about it. For example describing the above PDF's contents, rather than commenting on their accuracy. |
| editing | Instance | The motivation for when the user intends to request a change or edit to the Target resource. For example an Annotation that requests a typo to be corrected. |
| highlighting | Instance | The motivation for when the user intends to highlight the Target resource or segment of it. For example to draw attention to the selected text that the annotator disagrees with. |
| identifying | Instance | The motivation for when the user intends to assign an identity to the Target. For example to associate the IRI that identifies a city with a mention of the city in a web page. |
| linking | Instance | The motivation for when the user intends to link to a resource related to the Target. |
| moderating | Instance | The motivation for when the user intends to assign some value or quality to the Target. For example annotating an Annotation to moderate it up in a trust network or threaded discussion. |
| questioning | Instance | The motivation for when the user intends to ask a question about the Target. For example to ask for assistance with a particular section of text, or question its veracity. |
| replying | Instance | The motivation for when the user intends to reply to a previous statement, either an Annotation or another resource. For example providing the assistance requested in the above. |
| tagging | Instance | The motivation for when the user intends to associate a tag with the Target. |

3. OTHER NOTABLE W3C RECOMMENDATIONS

3.1 Webmention

- W3C Recommendation 12 January 2017
- -- a simple way to notify any URL when you mention it on your site.
- -- From the receiver's perspective, it's a way to request notifications when other sites mention it.

3.2 Micropub

- *W3C Proposed Recommendation* 13 April 2017
- -- the protocol is used to create, update and delete posts on one's own domain using third-party clients.
- -- Web apps and native apps (e.g., iPhone, Android) can use Micropub to post and edit articles, short notes, comments, likes, photos, events or other kinds of posts on your own website.

(CONT.) 3. OTHER NOTABLE RECOMMENDATIONS

3.3 Linked Data Notifications

W3C Recommendation 2 May 2017

- -- a protocol that describes
 - how servers (receivers) can have messages pushed to them by applications (senders),
 - how other applications (consumers) may retrieve those messages.
- Any resource can advertise a receiving endpoint (Inbox) for the messages.
 - Messages are expressed in RDF, and can contain any data.

3.4 Subresource Integrity

W3C Recommendation 23 June 2016

- -- a mechanism by which user agents may verify that a fetched resource has been delivered without unexpected manipulation.

4. International Image Interoperability Framework (IIIF)



<http://iiif.io/>

The following slides are based on:

- Sanderson, Rob (2015) “Introduction to the Presentation API” <http://www.slideshare.net/azaroth42/iiif-presentation-api>;
“Introduction to IIIF” <http://www.slideshare.net/azaroth42/introduction-to-iiif> ;
- Warner, Simeon (2015) “IIIF Introduction and Opportunities at Cornell” <http://www.slideshare.net/simeonwarner/2015-01-cornellvrvggiif> ;
- Robson, Glen (2017) “Introduction to Annotation, Content Search, and IIIF Authentication from the IIIF Conference - The Vatican” <https://www.slideshare.net/GlenRobson/introduction-to-annotation-content-search-and-iiif-authentication-from-the-iiif-conference-the-vatican>
- Cramer, Tom (2017) “03 Introduction to IIIF” <https://www.youtube.com/watch?v=EE1YskDrzPs>
- IIIF Website specifications & showcases and <https://www.youtube.com/channel/UClcQIkLdYra7ZnOmMJnC5OA>

International Image Interoperability Framework



Image-based Resources



Books



Manuscripts



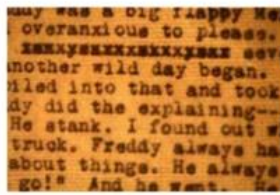
Newspapers



(Sheet) Music



Art / Vis. Resources



Archival Materials



Maps



STEM Imagery



Scrolls



Architecture

IIIF Vision

Create a global framework by which image-based **resources** (images, books, maps, scrolls, manuscripts, musical scores, etc.)

...from **any** participating institution can be delivered in a standard way

...via **any** compatible image server

...for display, manipulation and annotation in **any** application,

...to **any** user on the Web.



IIIF APIs

<http://iiif.io/technical-details.html>

API= application programming interface, a set of routines, protocols, and tools for building software applications.

1.

Image API

Get images via a simple, RESTful, web service.

Support for tiles needed for pan-zoom viewers.

2.

Presentation API

Just enough metadata to drive a remote viewing experience.

(e.g. sequence, labels, attribution, license)

3.

Authentication API

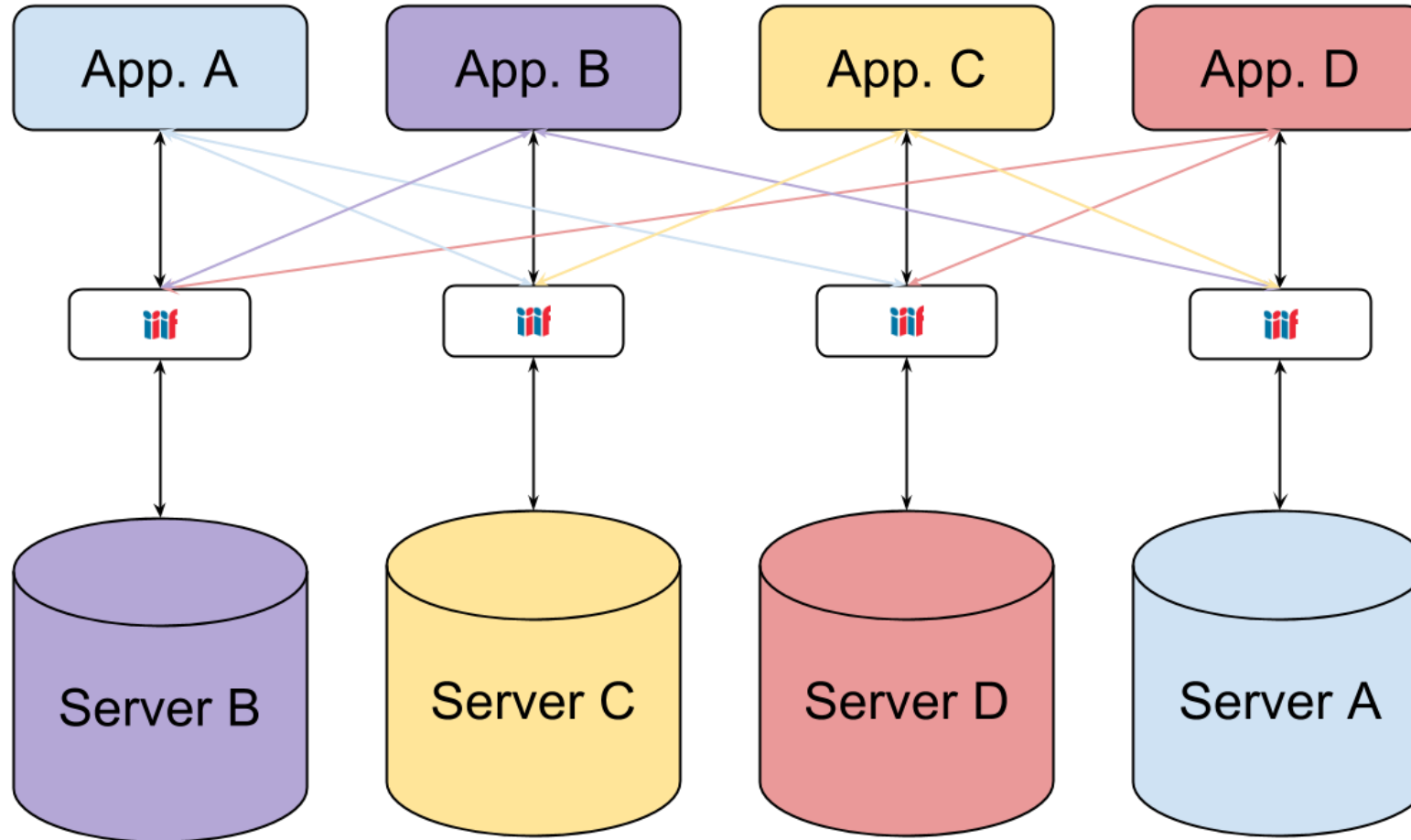
A set of workflows for guiding the user through an *existing* access control system.

4.

Content Search API

Searching annotation content, not metadata.

Facilitate distributed access over standard APIs

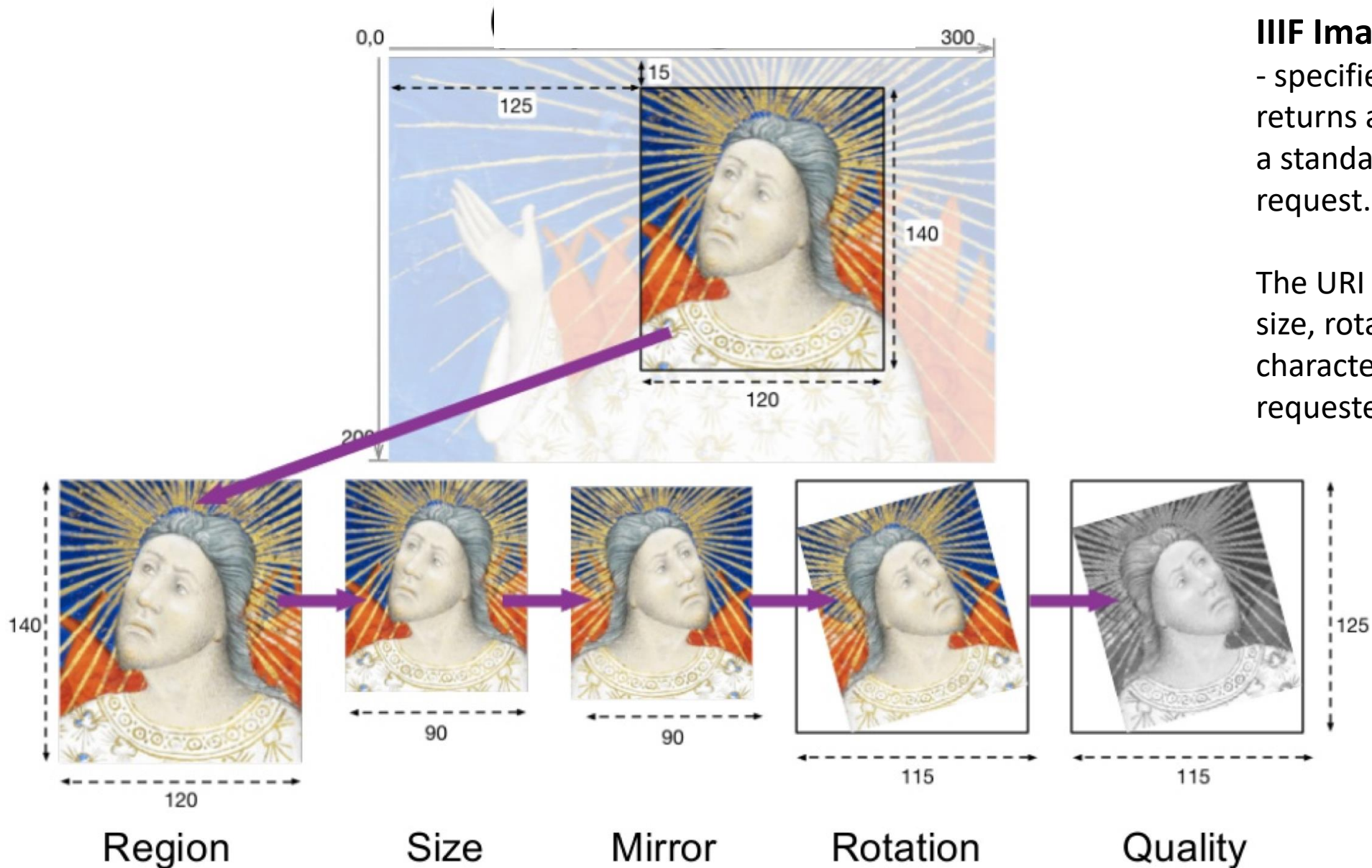


Allowing distributed access over standard APIs allows users to reuse and remix content, and supports an ecosystem of applications. Strong IIF community: national libraries, research institutions, museums, aggregators, projects.

IIIF Image API

- specifies a web service that returns an image in response to a standard HTTP or HTTPS request.

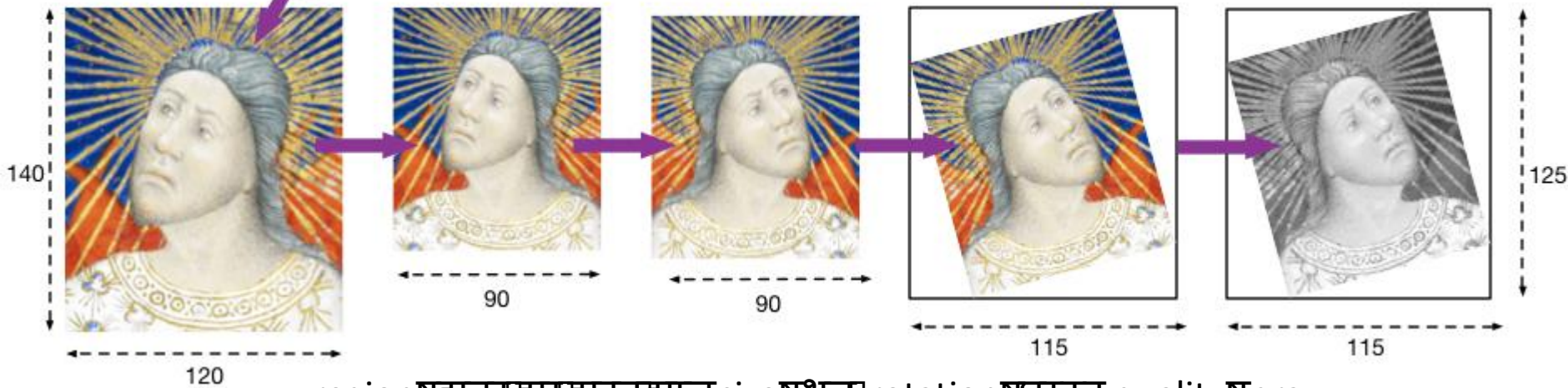
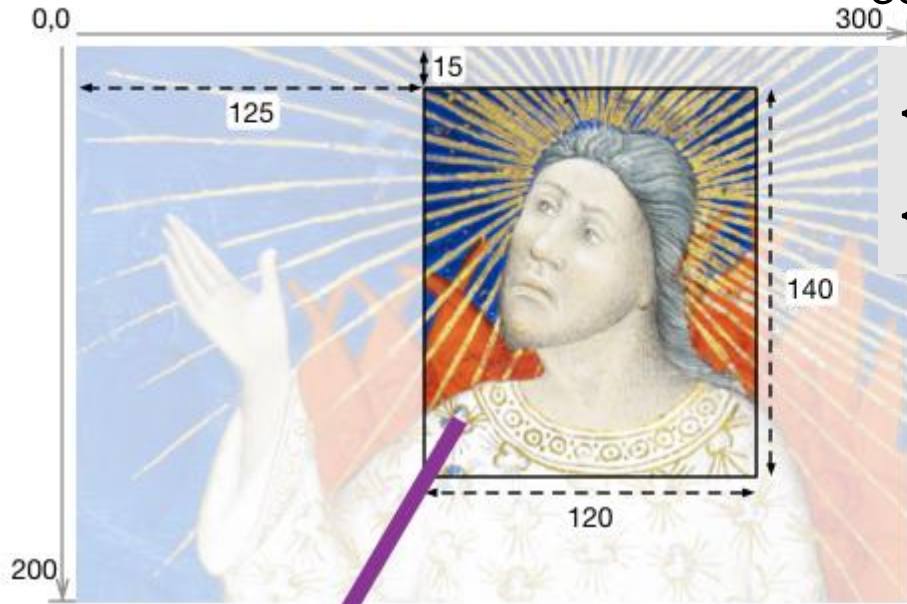
The URI can specify the region, size, rotation, quality characteristics and format of the requested image.



The IIF Image API URI for requesting an image *must* conform to the following URI Template:

```
{scheme}://{server}/{prefix}/{identifier}/  
{region}/{size}/{rotation}/{quality}.{format}
```

<http://iiif.io/api/image/2.1/>



region 125 15 120 140 size 90 rotation 90 quality gray
115 115 125
120 90 90 115 115 125
region 125 15 120 140 size 90 rotation 90 quality gray
115 115 125
120 90 90 115 115 125
gray.jpg

Base URL: {scheme}://{host}{/prefix}/{identifier}

Image Resource:

{base}/{region}/{size}/{rotation}/{quality}.{format}

Order of Implementation

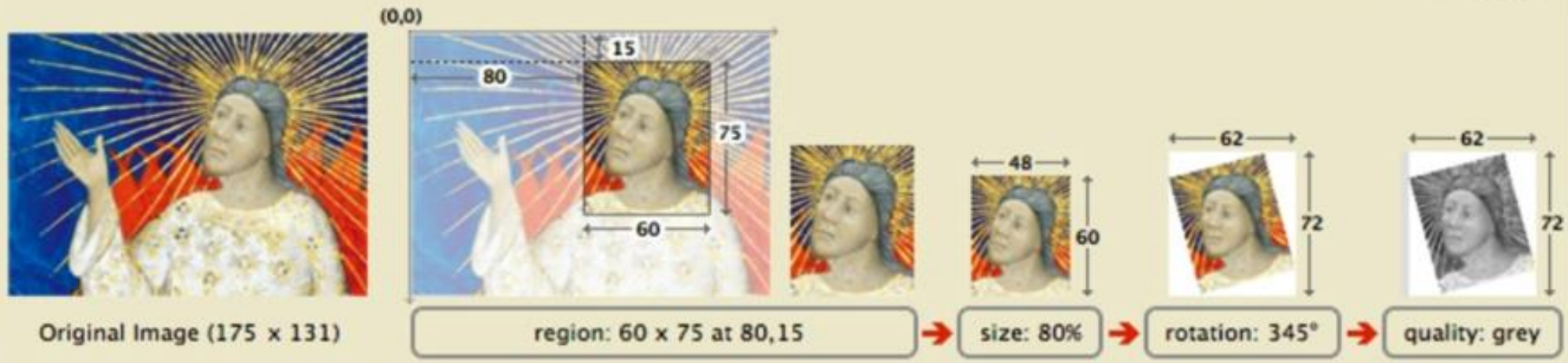
<http://www.example.org/image-service/abcd1234/80,15,60,75/pct:80/345/grey.jpg>

region

size

quality

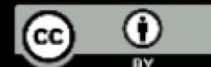
rotation format

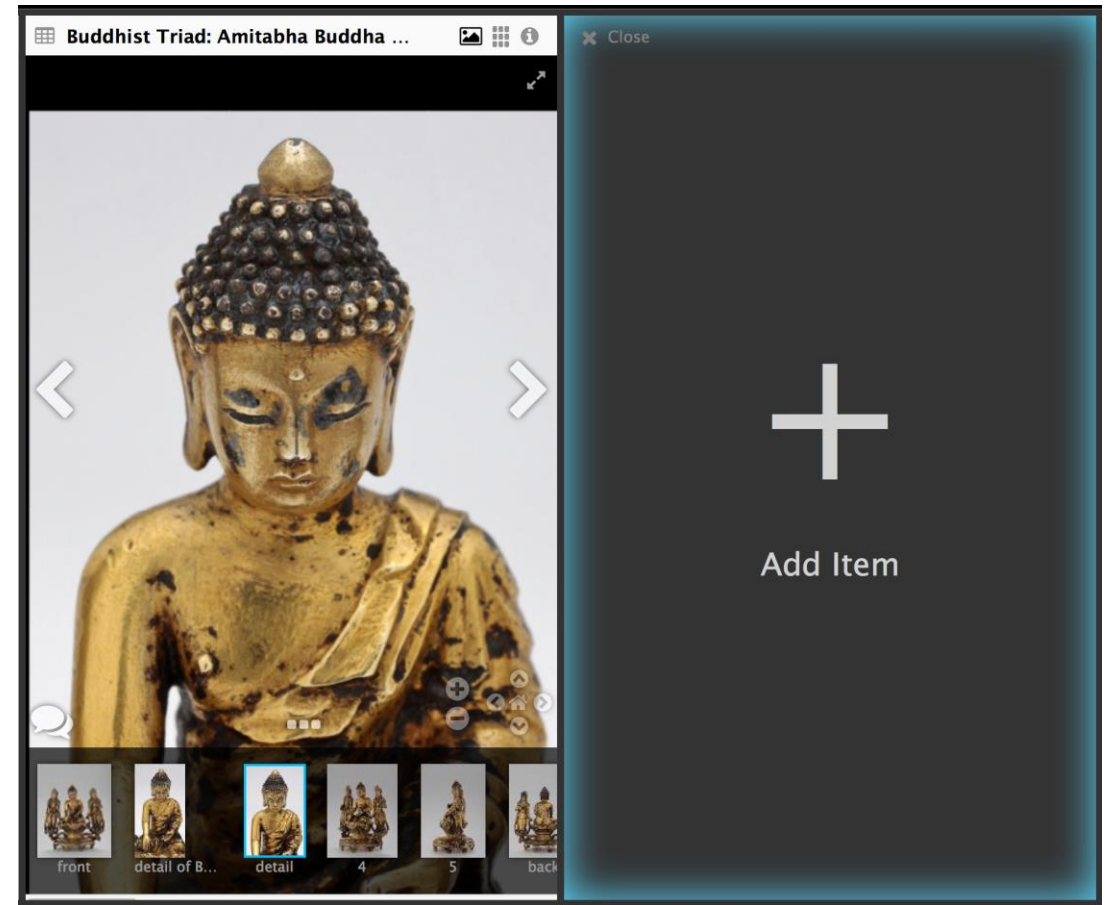
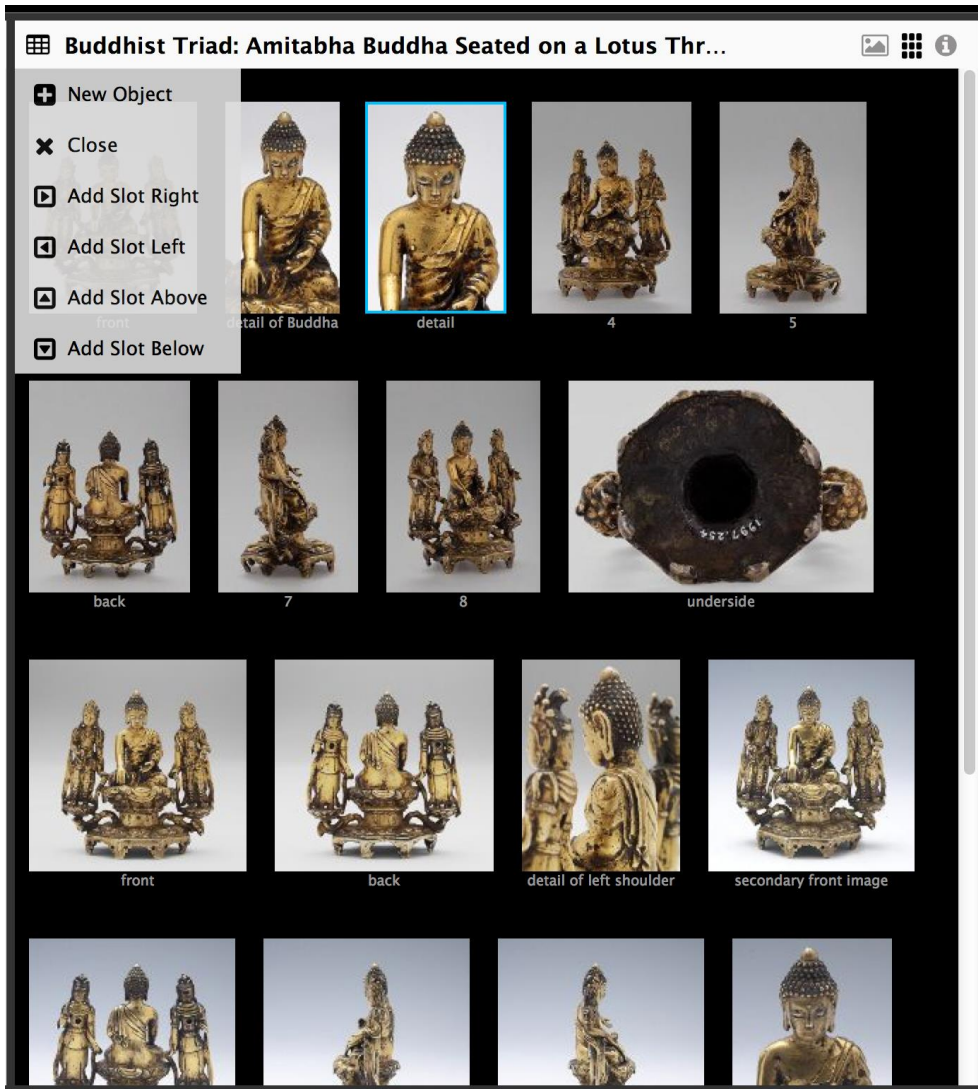


Not just scanned pages: Images of 3D objects



Photo: Jeffrey Emanuel
Thanks to Harvard's Fogg Museum and Rashmi Singhal





<https://github.com/IIIF/mirador>

<http://projectmirador.org/demo/#aba693db-5073-4bcc-a855-9925fa3168d4>

2.1. Basic Types

This specification makes use of the following primary resource types:

Manifest

The overall description of the structure and properties of the digital representation of an object. It carries information needed for the viewer to present the digitized content to the user, such as a title and other descriptive information about the object or the intellectual work that it conveys. Each manifest describes how to present a single object such as a book, a photograph, or a statue.

Sequence

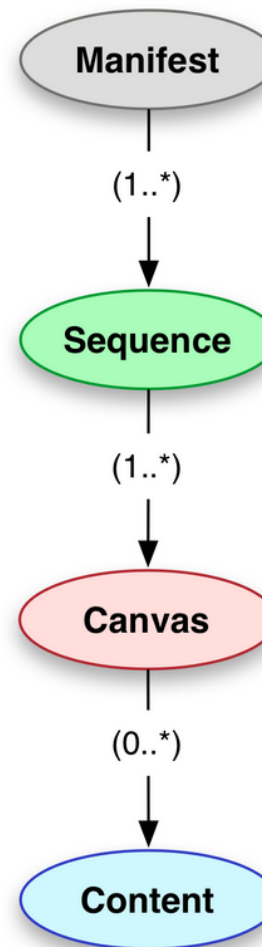
The order of the views of the object. Multiple sequences are allowed to cover situations when there are multiple equally valid orders through the content, such as when a manuscript's pages are rebound or archival collections are reordered.

Canvas

A virtual container that represents a page or view and has content resources associated with it or with parts of it. The canvas provides a frame of reference for the layout of the content. The concept of a canvas is borrowed from standards like PDF and HTML, or applications like Photoshop and Powerpoint, where the display starts from a blank canvas and images, text and other resources are “painted” on to it.

Content

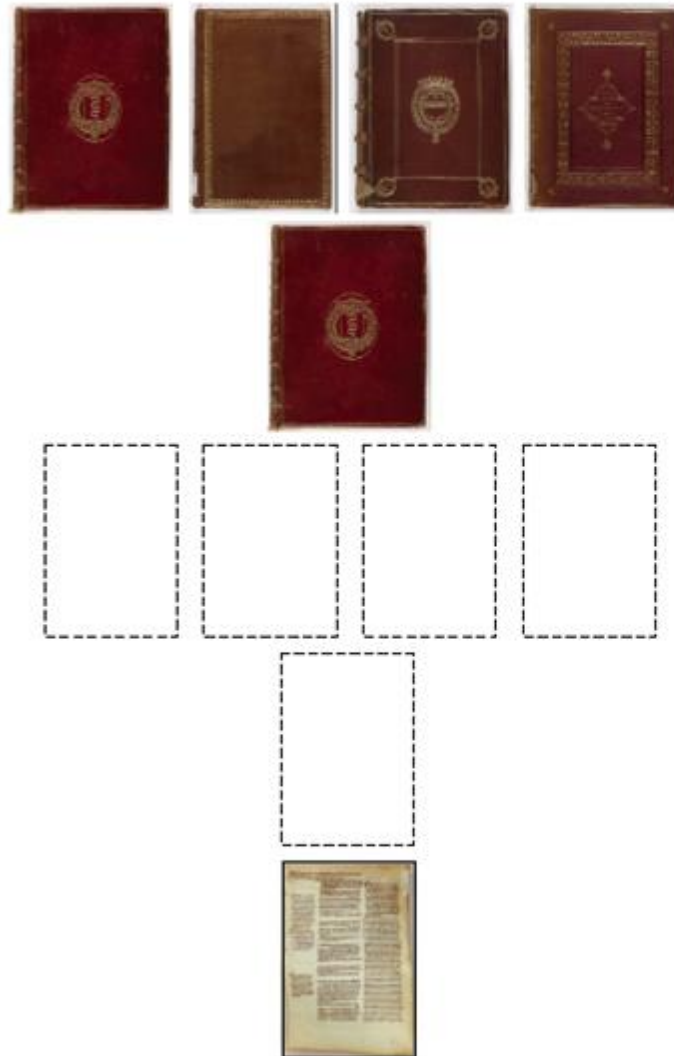
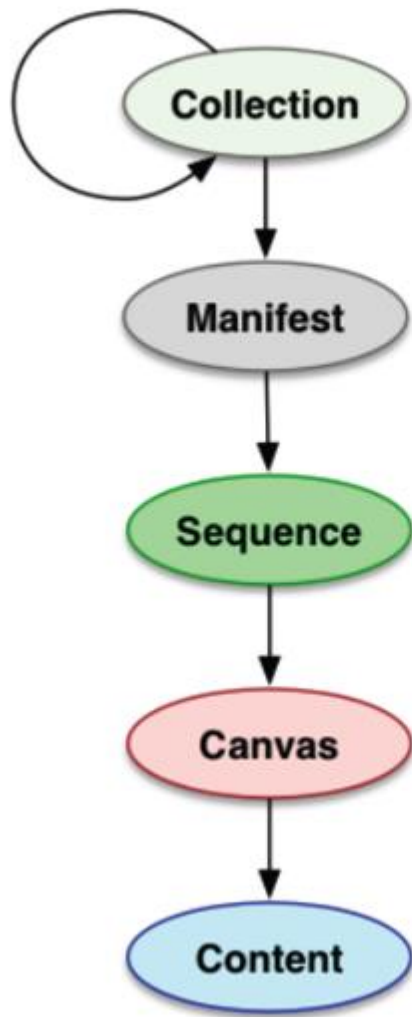
Content resources such as images or texts that are associated with a canvas.



Just enough metadata to drive a remote viewing experience.

(e.g. sequence, labels, attribution, license)



















Structure



COLLECTIONS, MANIFESTS

Filter objects...
Add new item from URL

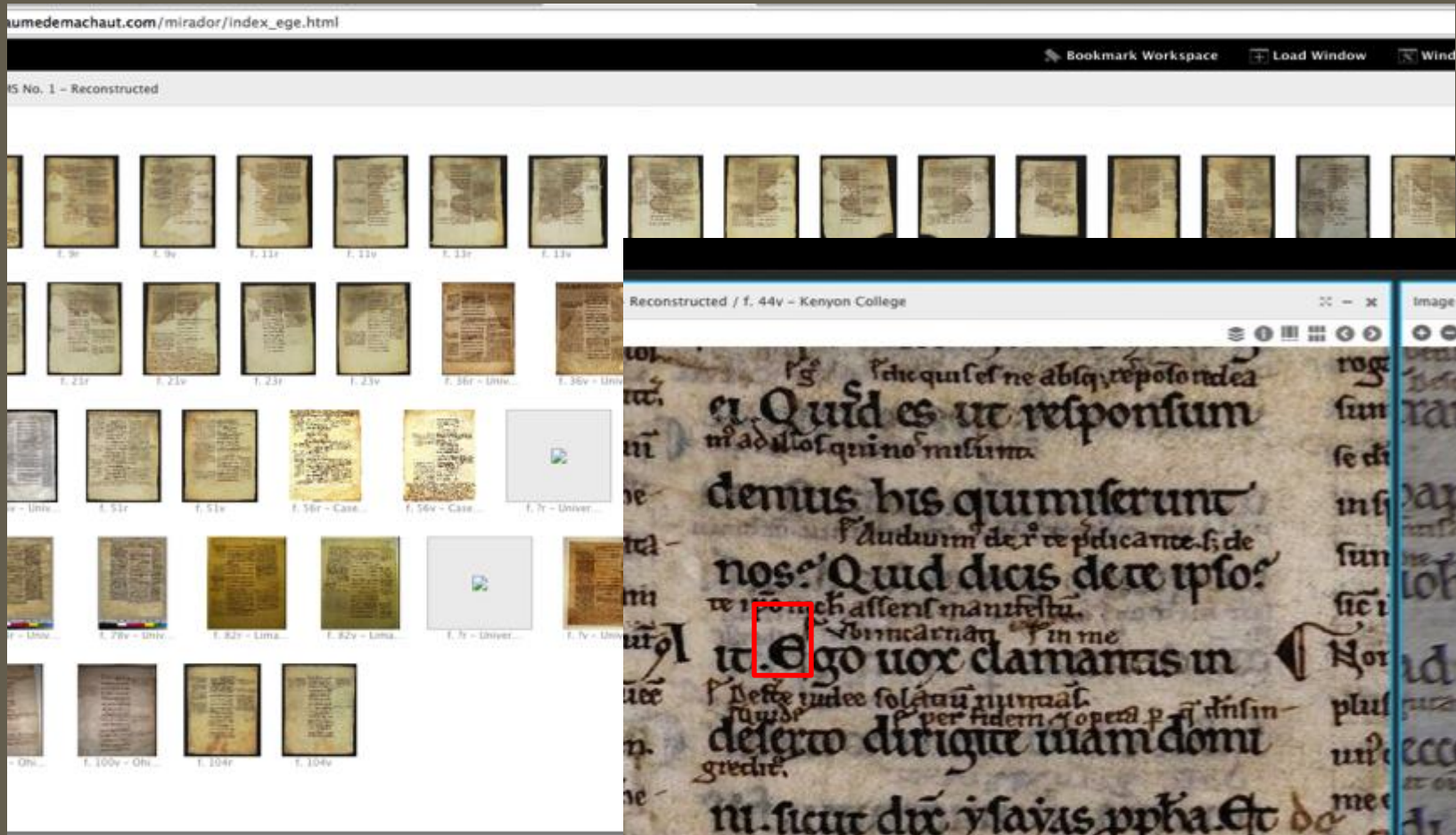
Bookmark Options Switch Workspace

| | | | |
|---|--|---|----------|
|  | Annotated school text... 700 items Harvard University |  | 689 more |
|  | Edwards, Richard. Ana... 508 items Harvard University |  | 495 more |
|  | MS Richardson 7. Hou... 480 items Harvard University |  | 470 more |
|  | Donzetti, Giacomo, L... 210 items Harvard University |  | 203 more |
|  | Apostle 28 items Harvard University |  | 13 more |
|  | MS Typ 441. Houghton... 40 items Harvard University |  | 29 more |
|  | Walters MS 168 458 items Stanford University |  | 446 more |
|  | Bodleian MS Bodley 850 246 items |  | 235 more |
|  | Bodleian MS Bodley 113 315 items Yale University |  | 303 more |

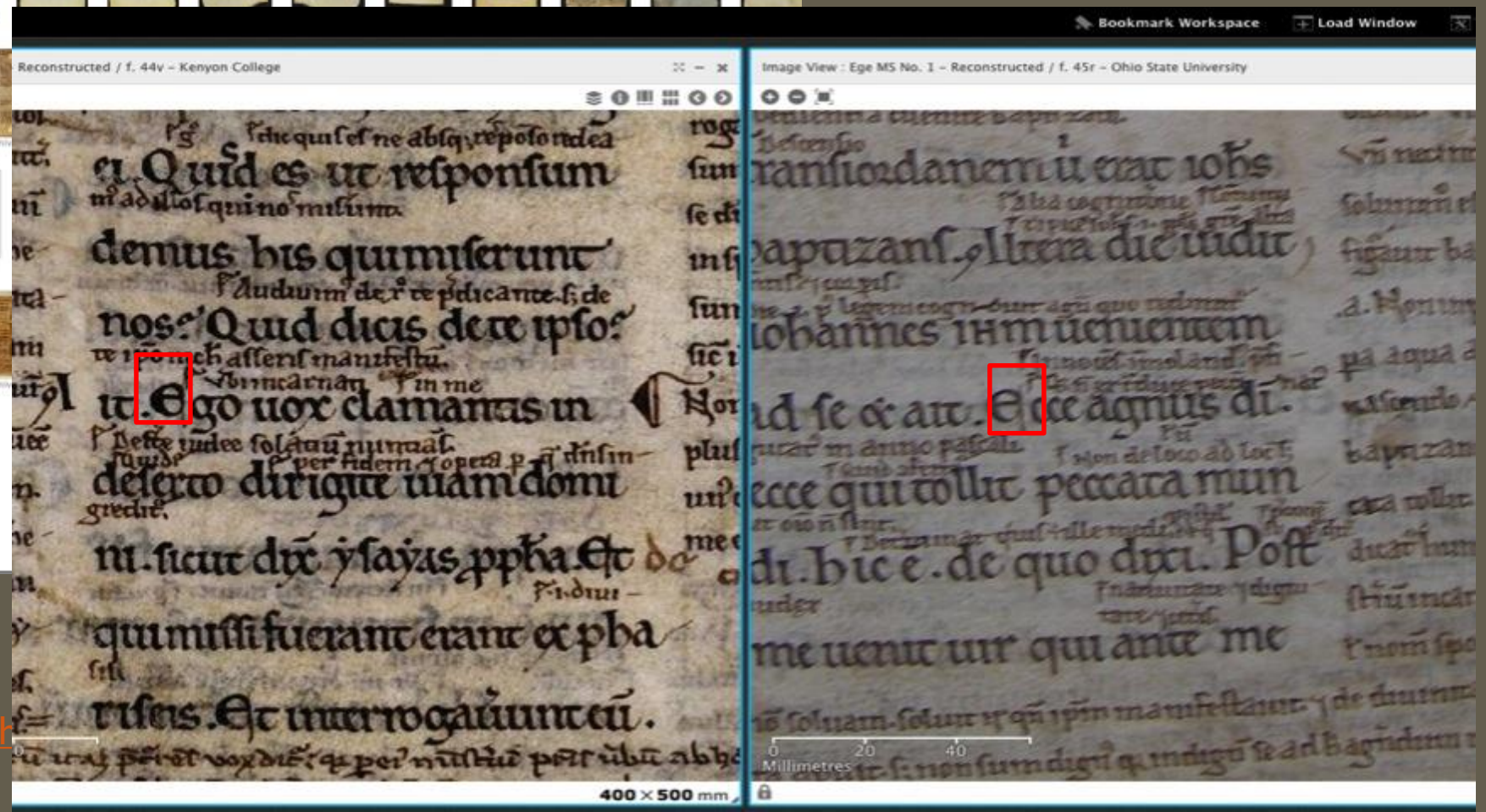
A Manifest

Collections

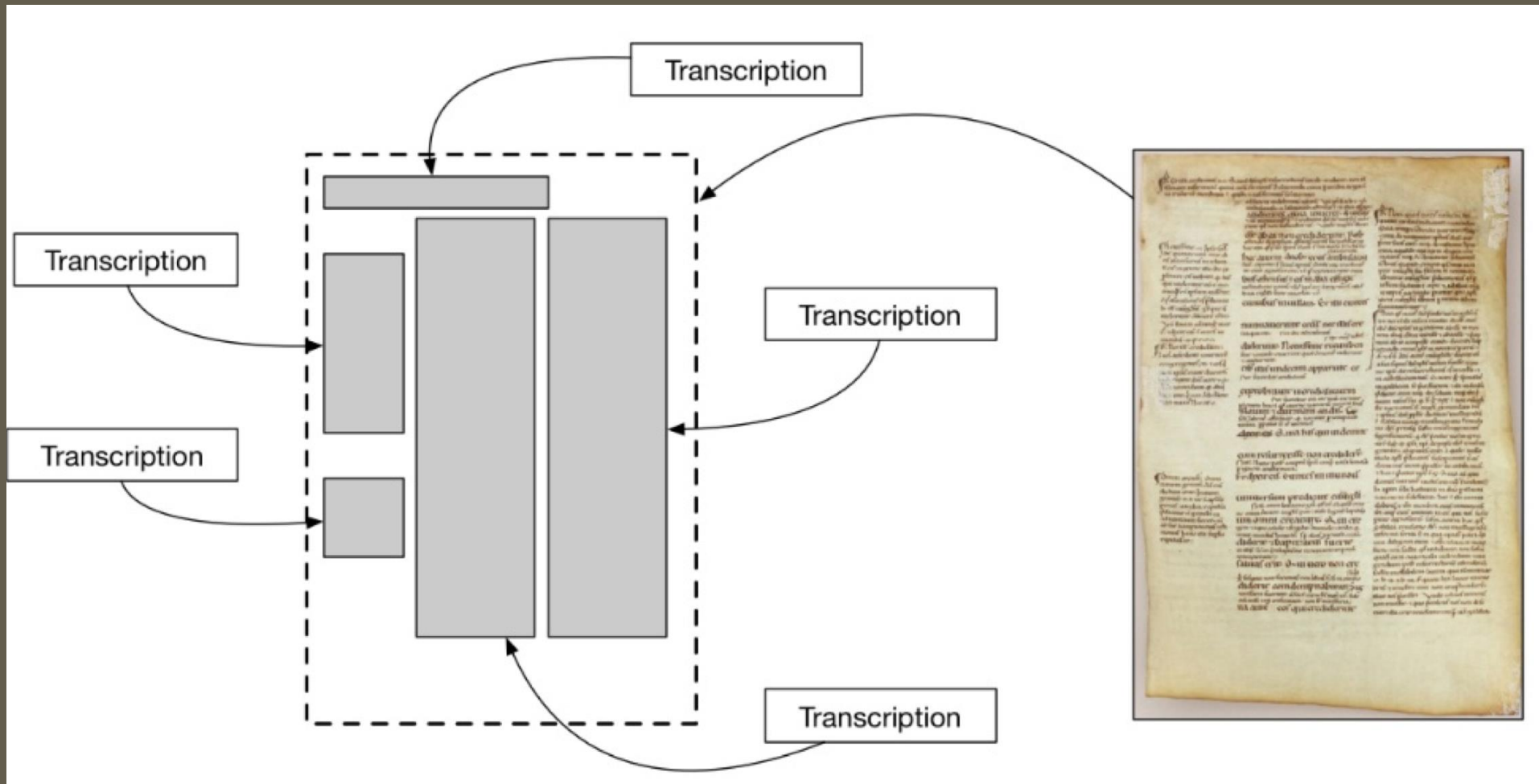
Mirador viewer showing images from 16 institutions, each serving their own images



Zoom to compare features from images provided by different institutions

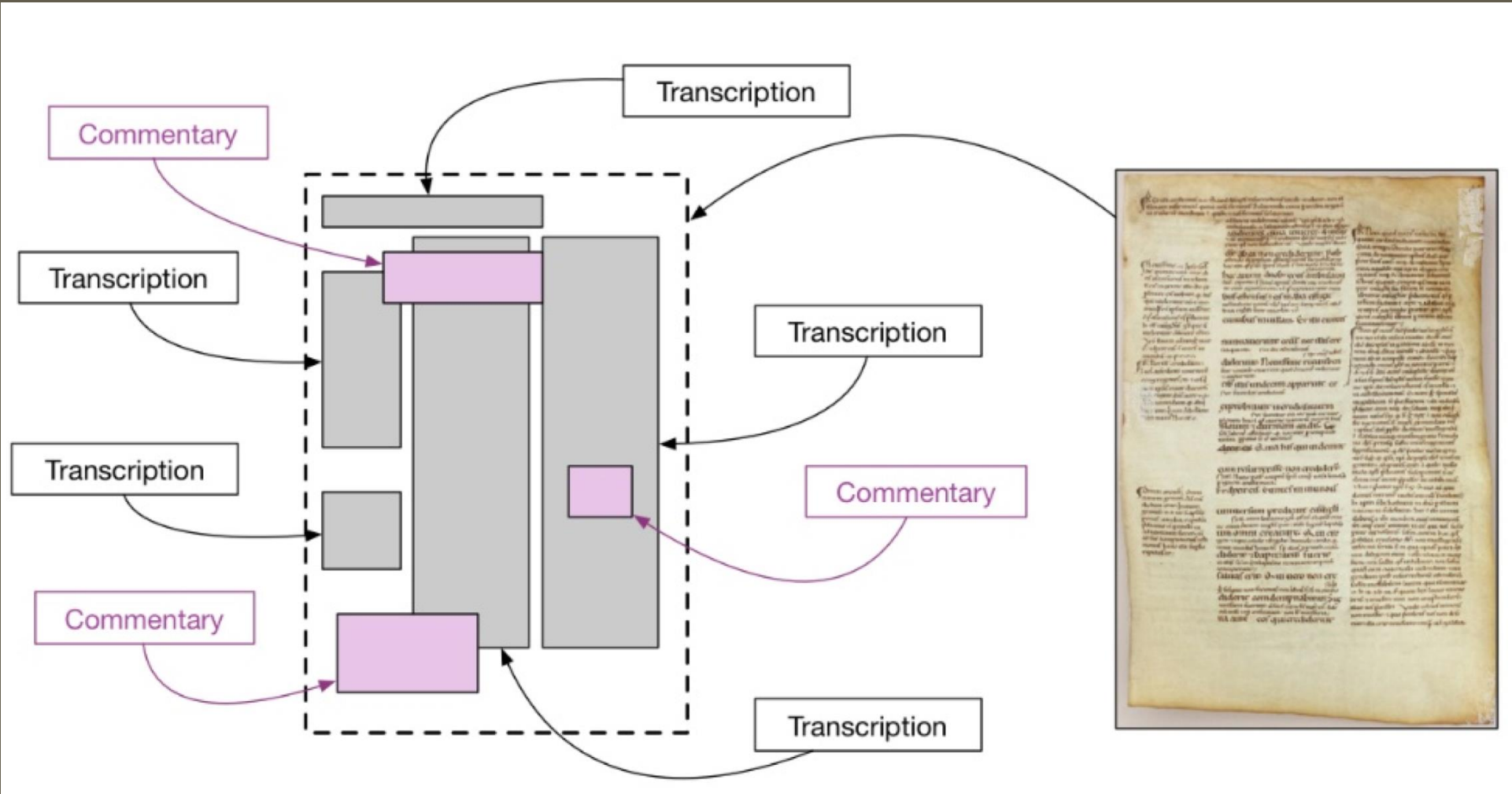


SHARED CANVAS



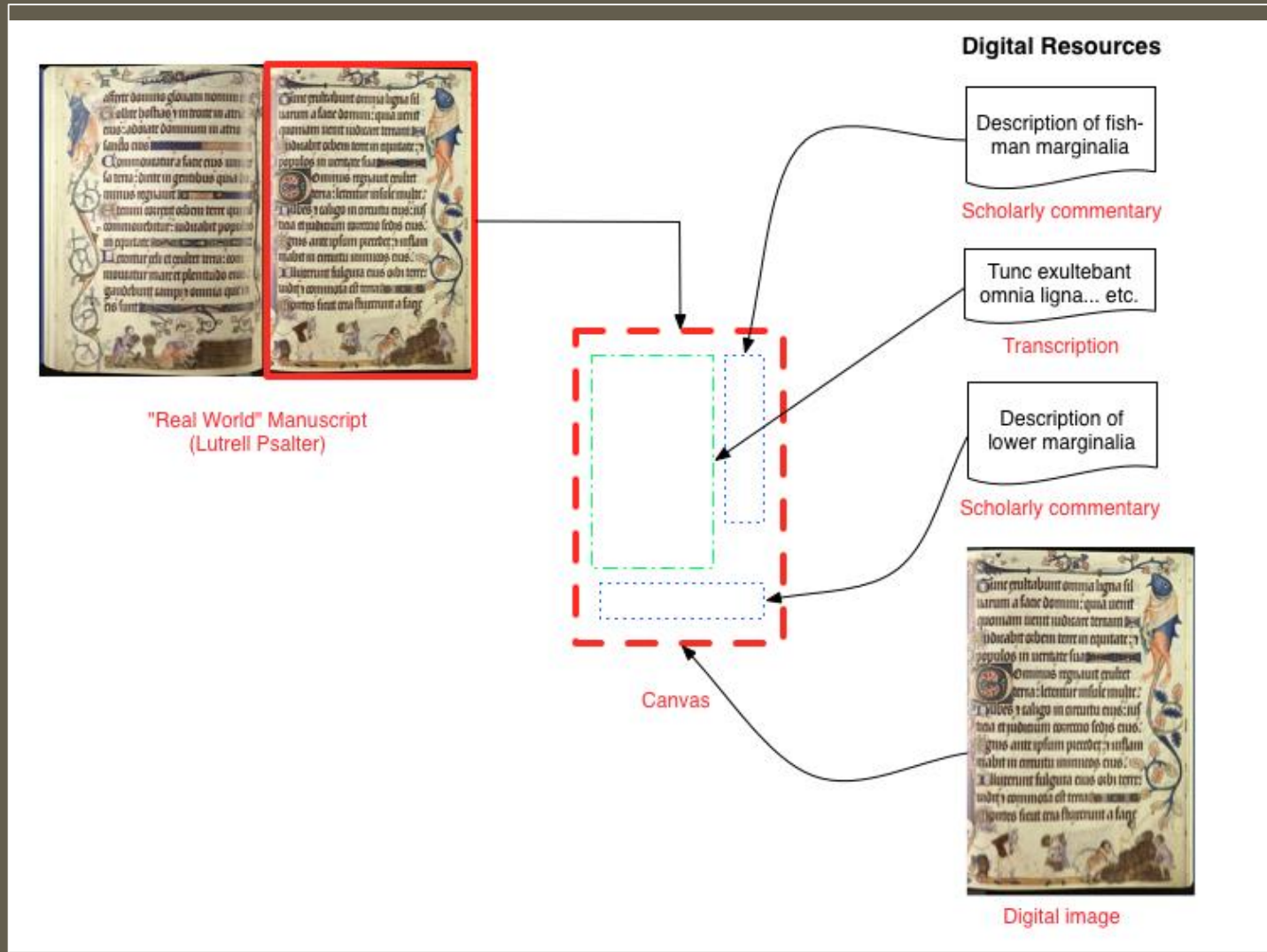
Each part is identifiable; transcription can be conducted for each part.

SHARED CANVAS



Each part is identifiable; transcription can be conducted for each part.
Annotations by experts or other contributors can be added into the canvas.

SHARED CANVAS



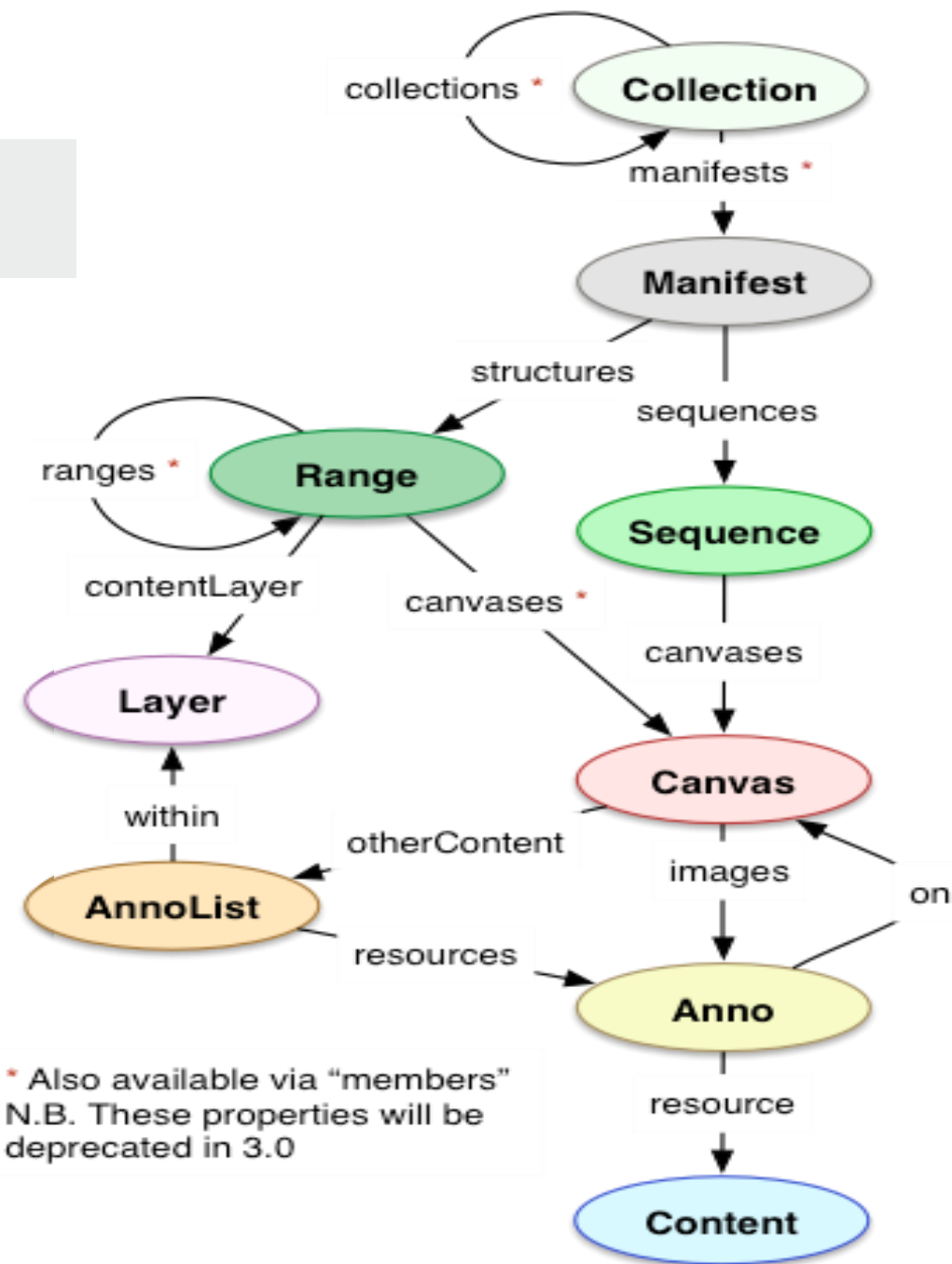
mix overview images, descriptions, page views, detail views etc.

The screenshot displays a digital manuscript viewer interface with three main panels:

- Overview View (Left Panel):** Titled "Ege MS No. 1 - Reconstructed", it shows a grid of 12 thumbnail images of manuscript pages. The thumbnails are labeled with folio numbers: f. 9r, f. 9v, f. 11v, f. 13r, f. 13v, f. 14v, f. 15r, f. 15v, f. 16v, f. 16bisr, f. 16bisv, and f. 17r.
- Metadata View (Middle Panel):** Titled "Metadata View : Ege MS No. 1 - Reconstructed", it displays details about the physical object/intellectual work. The label is "Ege MS No. 1 - Reconstructed". The description reads: "Infamous biblioclast Otto Ege owned a 12th-century French glossed bible in the first half of the 20th century. During the 1940s and 1950s this manuscript was broken apart and individual leaves used in his portfolio set Fifty Original Leaves from Medieval Manuscripts. Copies of this portfolio set, of which forty are known to have existed, were sold throughout North America and were purchased by public and academic libraries. At the time of this reconstruction, 33 institutions holding leaves from this glossed bible have been identified - there are more out there, as the manuscript reconstruction is still far from complete. The current reconstruction brings these leaves together in a single viewing interface as a partially reconstructed whole in order to demonstrate the power of interoperability to make whole. once".
- Image View (Right Panel):** Titled "Image View : Ege MS No. 1 - Reconstructed / f. 8r", it shows a large, detailed view of a manuscript page (folio 8r) with dense Latin text in two columns.

Red arrows from the text above point to the overview view, the metadata view, and the image view.

Shared Canvas
-- all resources:







* Also available via "members"
N.B. These properties will be deprecated in 3.0

















































































-▶ List of Objects and Collections
-▶ Full Object
-▶ Order of all Pages
-▶ List of Pages
-▶ Set of Lists
-▶ Single Page
-▶ List of Associations
-▶ Association
-▶ Digital Content

B. Summary of Metadata Requirements

















































































<http://iiif.io/api/image/2.1/>

| Field | Meaning |
|--|-------------|
|  | Required |
|  | Recommended |
|  | Optional |
|  | Not Allowed |

Descriptive and Rights Properties

| | label | metadata | description | thumbnail | a | | | |
|----------------|---|---|---|---|---|---|---|---|
| Collection |  |  |  |  |  |  |  |  |
| Manifest |  |  |  |  |  |  |  |  |
| Sequence |  |  |  |  |  |  |  |  |
| Canvas |  |  |  |  |  |  |  |  |
| Annotation |  |  |  |  |  |  |  |  |
| AnnotationList |  |  |  |  |  |  |  |  |
| Range |  |  |  |  |  |  |  |  |
| Layer |  |  |  |  |  |  |  |  |
| Image Content |  |  |  |  |  |  |  |  |
| Other Content |  |  |  |  |  |  |  |  |

Technical Properties

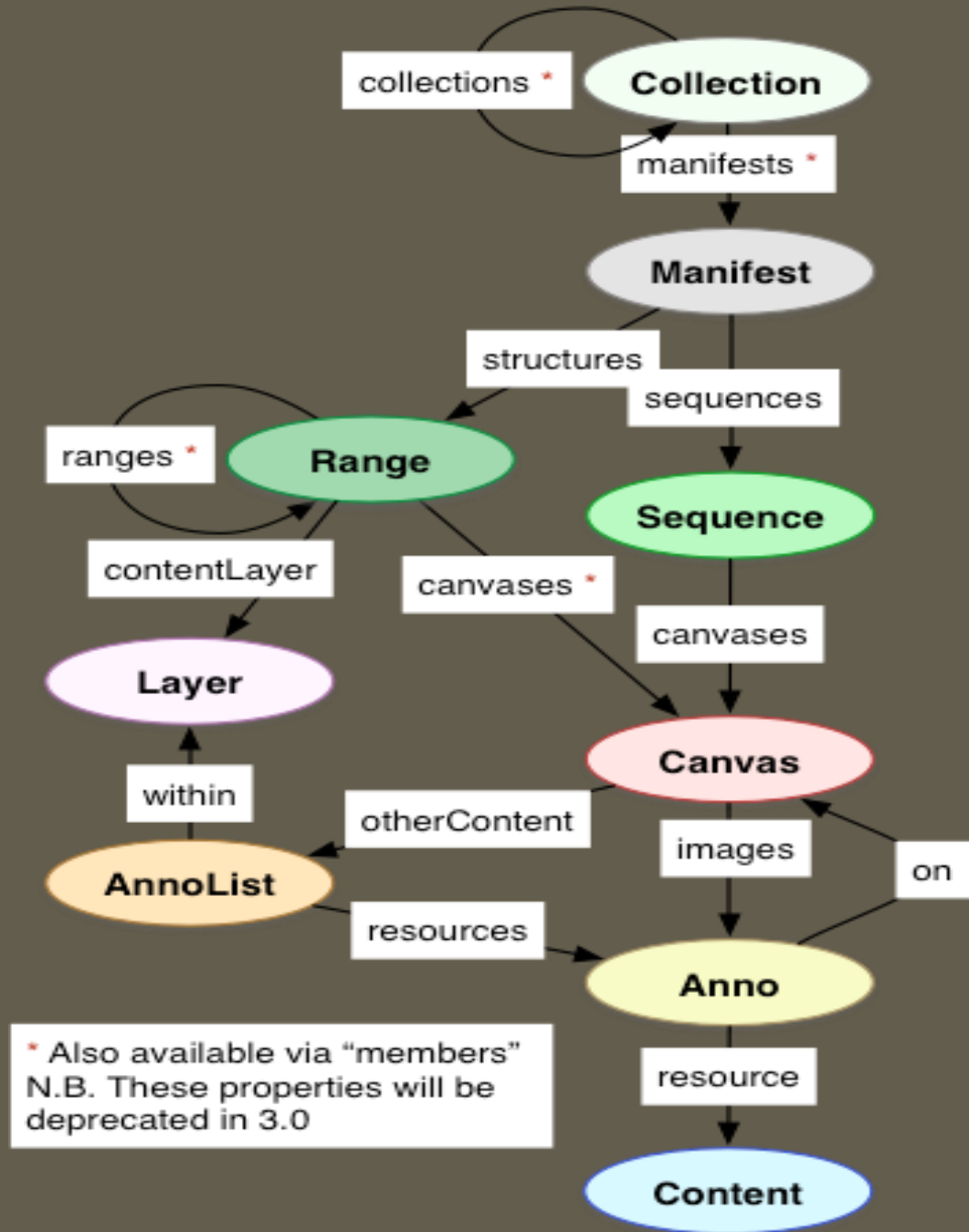
| | @id | @type | format | height | width | viewingDirection | viewingHint | navDate |
|----------------|--|--|--|--|--|--|--|--|
| Collection |  |  |  |  |  |  |  |  |
| Manifest |  |  |  |  |  |  |  |  |
| Sequence |  |  |  |  |  |  |  |  |
| Canvas |  |  |  |  |  |  |  |  |
| Annotation |  |  |  |  |  |  |  |  |
| AnnotationList |  |  |  |  |  |  |  |  |
| Range |  |  |  |  |  |  |  |  |
| Layer |  |  |  |  |  |  |  |  |
| Image Content |  |  |  |  |  |  |  |  |
| Other Content |  |  |  |  |  |  |  |  |

See more properties for **linking, paging, structural, protocol behavior**, at the website

Recommended URI Patterns

| Resource | URI Pattern |
|----------------|---|
| Collection | {scheme}://{host}/{prefix}/collection/{name} |
| Manifest | {scheme}://{host}/{prefix}/{identifier}/manifest |
| Sequence | {scheme}://{host}/{prefix}/{identifier}/sequence/{name} |
| Canvas | {scheme}://{host}/{prefix}/{identifier}/canvas/{name} |
| Annotation | {scheme}://{host}/{prefix}/{identifier}/annotation/{name} |
| AnnotationList | {scheme}://{host}/{prefix}/{identifier}/list/{name} |
| Range | {scheme}://{host}/{prefix}/{identifier}/range/{name} |
| Layer | {scheme}://{host}/{prefix}/{identifier}/layer/{name} |
| Content | {scheme}://{host}/{prefix}/{identifier}/res/{name}.{format} |

<http://iiif.io/api/image/2.1/>



Format

The Shared Canvas data model and JSON-LD are leveraged to create an easy-to-implement, JSON-based format.

Example: Sequence

6.2. Sequence

Recommended URI pattern:

```
{scheme}://{host}/{prefix}/{identifier}
/sequence/{name}
```

The sequence conveys the ordering of the views of the object. The default sequence (and typically the only sequence) **MUST** be embedded within the manifest, and **MAY** also be available from its own URI. The default sequence **MAY** have a URI to identify it. Any additional sequences **MUST** be referred to from the manifest, not embedded within it, and thus these additional sequences **MUST** have an HTTP URI.

The new {name} parameter in the URI structure **MUST** distinguish it from any other sequences that may be available for the physical object. Typical default names for sequences are “normal” or “basic”. Names **SHOULD** begin with an alphabetical character.

```
{
  // Metadata about this sequence
  "@context": "http://iiif.io/api/presentation/2/context.json",
  "@id": "http://www.example.org/iiif/book1/sequence/normal",
  "@type": "sc:Sequence",
  "label": "Current Page Order",

  "viewingDirection": "left-to-right",
  "viewingHint": "paged",
  "startCanvas": "http://www.example.org/iiif/book1/canvas/p2",

  // The order of the canvases
  "canvases": [
    {
      "@id": "http://www.example.org/iiif/book1/canvas/p1",
      "@type": "sc:Canvas",
      "label": "p. 1"
      // ...
    },
    {
      "@id": "http://www.example.org/iiif/book1/canvas/p2",
      "@type": "sc:Canvas",
      "label": "p. 2"
      // ...
    },
    {
      "@id": "http://www.example.org/iiif/book1/canvas/p3",
      "@type": "sc:Canvas",
      "label": "p. 3"
      // ...
    }
  ]
}
```


IIIF Authentication API

Table of Contents

- [1. Introduction](#)
 - [1.1. Terminology](#)
 - [1.2. Authentication for Content Resources](#)
 - [1.3. Authentication for Description Resources](#)
 - [1.4. Security](#)
- [2. Authentication Services](#)
 - [2.1. Access Cookie Service](#)
 - [2.1.1. Service Description](#)
 - [2.1.2. Interaction with the Access Cookie Service](#)
 - [2.1.3. Login Interaction Pattern](#)
 - [2.1.4. Clickthrough Interaction Pattern](#)
 - [2.1.5. Kiosk Interaction Pattern](#)
 - [2.1.6. External Interaction Pattern](#)
 - [2.2. Access Token Service](#)
 - [2.2.1. Service Description](#)
 - [2.2.2. The JSON Access Token Response](#)
 - [2.2.3. Interaction for Non-Browser Client Applications](#)
 - [2.2.4. Interaction for Browser-Based Client Applications](#)
 - [2.2.5. Using the Access Token](#)
 - [2.2.6. Access Token Error Conditions](#)
 - [2.3. Logout Service](#)
 - [2.3.1. Service Description](#)
 - [2.3.2. Interaction](#)
 - [2.4. Example Description Resource with Authentication Services](#)
- [3. Interaction with Access-Controlled Resources](#)
 - [3.1. All or Nothing Access](#)
 - [3.2. Tiered Access](#)
- [4. Workflow from the Browser Client Perspective](#)
- [Appendices](#)



| Property | Required? | Description |
|----------|-----------|---|
| @context | REQUIRED | The context of the API. The value is <code>/1/context.json</code> . |

| Pattern | Profile URI | Description |
|---------|--|--|
| Login | <code>http://iiif.io/api/auth/1/login</code> | The user will be prompted with a UI provided by the service. |

An example service description for the Login interaction pattern:

```
{
  // ...
  "service" : {
    "@context": "http://iiif.io/api/auth/1/context.json",
    "@id": "https://authentication.example.org/login",
    "profile": "http://iiif.io/api/auth/1/login",
    "label": "Login to Example Institution",
    "header": "Please Log In",
    "description": "Example Institution requires that you create an account to view this content.",
    "confirmLabel": "Login",
    "failureHeader": "Authentication Failed",
    "failureDescription": "<a href='\"http://example.org/po
    "service": [
      // Access token and Logout services ...
    ]
  }
}
```

Table of Contents

- 1. [Introduction](#)
 - 1.1. [Use Cases](#)
 - 1.2. [Terminology](#)
- 2. [Overview](#)
- 3. [Search](#)
 - 3.1. [Service Description](#)
 - 3.2. [Request](#)
 - 3.2.1. [Query Parameters](#)
 - 3.2.2. [Example Request](#)
 - 3.3. [Presentation API Compatible Responses](#)
 - 3.3.1. [Simple Lists](#)
 - 3.3.2. [Paging Results](#)
 - 3.3.3. [Target Resource Structure](#)
 - 3.4. [Search API Specific Responses](#)
 - 3.4.1. [Ignored Parameters](#)
 - 3.4.2. [Search Term Snippets](#)
 - 3.4.3. [Search Term Highlighting](#)
 - 3.4.4. [Multi-Annotations Hits](#)
- 4. [Autocomplete](#)
 - 4.1. [Service Description](#)
 - 4.2. [Request](#)
 - 4.2.1. [Query Parameters](#)
 - 4.2.2. [Example Request](#)
 - 4.3. [Response](#)
- 5. [Property Definitions](#)
- Appendices
 - A. [Request Parameter Requirements](#)
 - B. [Versioning](#)

| Parameter | Definition |
|------------|--|
| q | A space s bodies) or separated |
| motivation | A space s search if a |
| date | A space s any of the DDThh:mm: based forr |
| user | A space s matches t |

| Motivation |
|--------------|
| painting |
| non-painting |
| commenting |
| describing |
| tagging |
| linking |

3.2.2. Example Request

This example request:

```
http://example.org/services/manifest/search?q=bird&motivation=painting
```

Would search for annotations with the word “bird” in their textual content, and have the motivation of painting. It would search annotations within the resource the service was associated with.

Related:

Web Annotation Data Model

W3C Recommendation 23 February 2017

Search



IIIF
85 subscribers

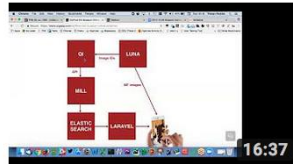
SUBSCRIBE 85



VIDEOS

Uploads PLAY ALL

SORT BY



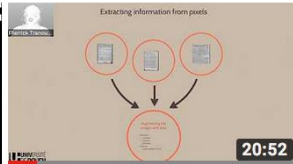
Demo of the Clifford Still Museum digital collections

29 views • 2 weeks ago



IIIF for conservation images at YCBA

49 views • 2 weeks ago



Newspapers Archives Indexing and Visualization

25 views • 4 weeks ago



Mirador Linked Data Notifications Demo

72 views • 1 month ago



IIIF A/V Proof of Concept Demo

192 views • 1 month ago



09 IIIF Panel: Benefits of Institutional Adoption

54 views • 2 months ago



06 IIIF: A Global Community Network

20 views • 2 months ago



04 IIIF Image API and IIIF Presentation API: Enhanced

81 views • 2 months ago



02 Welcome from the Vatican Library

47 views • 2 months ago



11 IIIF A/V and Beyond

39 views • 2 months ago



12 Fun and Games with Machine Processing and IIIF

47 views • 2 months ago



335 million IIIF resources distributed over 100+ institutions

10 Discovery of IIIF Resources

29 views • 2 months ago



08 Implementation of IIIF at the Vatican Library: the state

21 views • 2 months ago



07 IIIF Community Groups and Engagement

27 views • 2 months ago



05 Annotation, Content Search, and IIIF

39 views • 2 months ago



03 Introduction to IIIF

137 views • 2 months ago



01 Welcome and Event Logistics

68 views • 2 months ago



Demo of IIIF functionality in the National Library of Wales'

63 views • 3 months ago

Questions?

Standards and Best Practices related to the Publication, Exchange, and Usage of Open Data

- *Data On The Web*
- *Image-based Resources*

Marcia Zeng
Kent State
University

mzeng@kent.edu

Marjorie Hlava
&
Bob Kasenchak
Access
Innovations

Jane Greenberg
Drexel
University

Mark Needleman
ASIS&T
Standards
Committee
co-Chair